



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,790	09/25/2003	Yoshiyuki Sogawa	F05-155625M/KQK	6408
21254 7590 04/18/2007 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER SCHAFFER, JONATHAN C	
			ART UNIT	PAPER NUMBER
			2624	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/18/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/669,790

Applicant(s)

SOGAWA, YOSHIYUKI

Examiner

Jonathan C. Schaffer

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/25/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The Applicant claims the process of "changing over" which does not specify any known or generally accepted computational relationship between the objects it is directed toward. For purposes of examination the term "changing over" will be interpreted as altering or transforming the objects it is directed toward. The Applicant is strongly encouraged to amend the claims using more specific and functional language.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6 and 8-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsumoto et al. (U.S. Publication Number 2001/0045979).

1. A stereoscopic image processing apparatus for calculating a parallax between a pair of images, comprising:

Art Unit: 2624

correlation evaluating means for evaluating a correlation of brightness between a first pixel block provided in one of said pair of images and a second pixel block provided in the other of said pair of images; and

Matsumoto teaches determining corresponding points which are representative of pixel blocks of varying sizes (ex. 9x9 or 16x16) by evaluating a correlation of grey-scale levels which is the same as brightness between a first pixel block $P_t(i,j)$ of one of two frames under analysis and a second pixel block $P'_t(i,j)$ of the second of two frames under analysis (§ 0112-0116).

region size changing over means for changing over a size of said first and second pixel blocks in evaluating said correlation.

Matsumoto teaches altering the size of pixel blocks (§ 0307-0308 & § 0323).

2. The stereoscopic image processing apparatus according to claim 1, wherein said size of said first and second pixel blocks is changed over in accordance with an area where said first pixel block is located.

Matsumoto discloses changing a pixel blocks size due to location in order to create a more natural image once the depth of the image components is known (§ 0307-0308 & § 0323).

3. The stereoscopic image processing apparatus according to claim 2, wherein said area is divided into two areas, an upper area and a lower area, by a horizontal boundary line.

Matsumoto discloses dividing the area into multiple areas including upper and lower using a horizontal boundary line (Fig. 16).

Art Unit: 2624

4. The stereoscopic image processing apparatus according to claim 3, wherein said size of said first and second pixel blocks is changed over to said first size when said first pixel block is located in said lower area.

As can be seen in Fig. 16 & 29 & 30 the size of pixel blocks have been changed when the pixel block is located in the lower area.

5. The stereoscopic image processing apparatus according to claim 2, wherein said area is divided into a plurality of areas and said size of said first and second pixel blocks is changed over to respective specified size of said first pixel block in accordance with said respective areas where said first pixel block is located.

(¶ 0307-0308 & ¶ 0323)

6. The stereoscopic image processing apparatus according to claim 1, wherein said first and second pixel blocks have a first size and a second size which is larger than said first size.

(¶ 0307-0308 & ¶ 0323)

8. A stereoscopic image processing apparatus for calculating a parallax between a pair of images, comprising:

correlation evaluating means for evaluating a correlation of brightness between a first pixel block provided in one of said pair of images and a second pixel block provided in the other of said pair of images;

Art Unit: 2624

Matsumoto teaches determining corresponding points which are representative of pixel blocks of varying sizes (ex. 9x9 or 16x16) by evaluating a correlation of grey-scale levels which is the same as brightness between a first pixel block $P_t(i,j)$ of one of two frames under analysis and a second pixel block $P_t'(i,j)$ of the second of two frames under analysis (§ 0112-0116).

weighting factor means for applying weighting a factor to each of pixel constituting said first and second pixel blocks in evaluating said correlation; and

Matsumoto discloses applying a weighting factor to both pixel blocks (§ 0135- 0155).

weighting factor changing over means for changing over said weighting factor in evaluating said correlation.

Matsumoto also discloses altering or changing over the weighting factor in the correlation evaluation (§ 0135- 0155).

9. The stereoscopic image processing apparatus according to claim 8, wherein said weight factor is established to 0 at a surrounding region around a central region of said first and second pixel blocks.

(§ 0135- 0155)

10. A stereoscopic image processing method of calculating a parallax between a pair of images, comprising the steps of:

evaluating a correlation of brightness between a first pixel block provided in one of said pair of images and a second pixel block provided in the other of said pair of images; and

Matsumoto teaches determining corresponding points which are representative of pixel blocks of varying sizes (ex. 9x9 or 16x16) by evaluating a correlation of grey-scale levels which is the same as brightness between a first pixel block $Pt(i,j)$ of one of two frames under analysis and a second pixel block $Pt'(i,j)$ of the second of two frames under analysis (§ 0112-0116).

changing over a size of said first and second pixel blocks.

Matsumoto teaches altering the size of pixel blocks (§ 0307-0308 & § 0323).

11. The method according to claim 10, wherein the step of changing over said first and second pixel blocks includes changing over in accordance with an area where said first pixel block is located.

Matsumoto discloses changing a pixel blocks size due to location in order to create a more natural image once the depth of the image components is known (§ 0307-0308 & § 0323).

12. The method according to claim 11, further comprising the step of dividing said area into two areas, an upper area and a lower area, by a horizontal boundary line.

Matsumoto discloses dividing the area into multiple areas including upper and lower using a horizontal boundary line (Fig. 16).

13. The method according to claim 11, further comprising the step of dividing said area into a plurality of areas by a plurality of boundary lines.

Matsumoto discloses dividing the area into multiple areas boundary lines (Fig. 16).

Art Unit: 2624

14. A stereoscopic image processing method of calculating a parallax between a pair of images, comprising the steps of:

evaluating a correlation of brightness between a first pixel block provided in one of said pair of images and a second pixel block provided in the other of said pair of images;

Matsumoto teaches determining corresponding points which are representative of pixel blocks of varying sizes (ex. 9x9 or 16x16) by evaluating a correlation of grey-scale levels which is the same as brightness between a first pixel block $P(i,j)$ of one of two frames under analysis and a second pixel block $P'(i,j)$ of the second of two frames under analysis (§ 0112-0116).

applying weighting a factor to each of pixel constituting said first and second pixel blocks in evaluating said correlation; and

Matsumoto discloses applying a weighting factor to both pixel blocks (§ 0135- 0155).

changing over said weighting factor in evaluating said correlation.

Matsumoto also discloses altering or changing over the weighting factor in the correlation evaluation (§ 0135- 0155).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

Art Unit: 2624

matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (U.S. Publication Number 2001/0045979).

7. The stereoscopic image processing apparatus according to claim 1, wherein said size of said first and second pixel blocks is changed over in accordance with imaging conditions including at least rain, fog, snow, backlight, nighttime, snow on road, stain or droplet on front windshield.

Matsumoto discloses processing the pixel blocks using gray-scale levels which is the same as brightness which can change due to weather (§ 0031) and then changing the size of these blocks using this information (§ 0307-0308 & § 0323). Matsumoto does not however disclose that weather is at least rain, fog or snow. The Examiner takes Official Notice that rain, fog and snow are obvious forms of weather, and it would have been obvious to one of ordinary skill in the art to which the Applicant's claimed invention pertains to include them in the processing because they cause a change in the brightness and therefore effect the processing in a negative way if not considered in the processing algorithm.

Conclusion

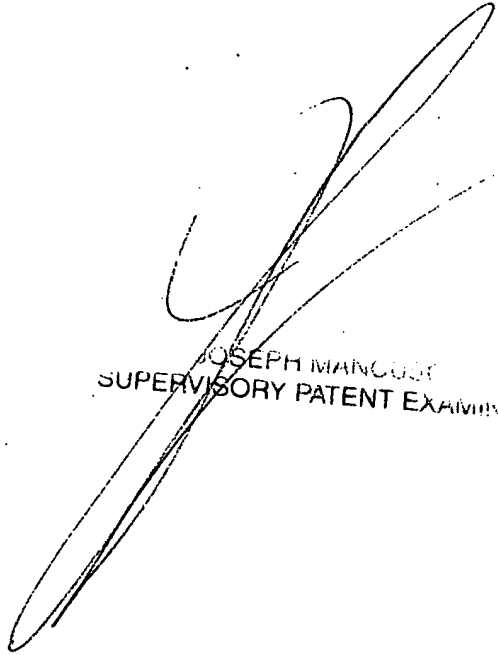
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Schaffer whose telephone number is (571) 272-0603. The examiner can normally be reached on 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS



JOSEPH MANCUSI
SUPERVISORY PATENT EXAMINER